integrity of entire system, not just component parts. (p. 22).

- Commission's rules must also consider adverse impact unlicensed PCS operations might have on microwave operation in bands immediately adjacent to 1910-1930 MHz band. (p. 22).

Technical standards:

- States that spectrum-sharing between unlicensed PCS users and fixed microwave licensees is unworkable; proposed power limits for 2 GHz unlicensed devices provide inadequate protection. (pp. 17-18).

- Urges FCC not to authorize any unlicensed PCS system to operate in 1910-1930 MHz band until: (1) adequate interference protection scheme is identified and implemented; or (2) all existing microwave users are given an opportunity to relocate from the band. (p. 18).

WINFORUM
Reply Comments on 2 GHz Unlicensed PCS

Interest: Alliance of unlicensed device manufacturers

Band plan:

- Agrees with commenters, including Ericsson and the Andrew Corp., that more than 20 MHz is needed for unlicensed devices (2-3). Instead recommends an allocation of 40-65 MHz (4).

- The majority of commenters addressing the issue have noted that the allocation for unlicensed devices must be exclusive because both end user modification of equipment to reduce interference and tracking of unlicensed devices by manufacturers are impossible (3-4).

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AMERICAN PAGING, INC.
Reply Comments on 900 MHz Narrowband PCS

Interest: Paging company, subsidiary of Telephone and Data Systems, Inc.

Band plan:

- Opposes the comments of Arch, Freeman Engineering, Motorola and others supporting adoption of large channel blocks, in connection with, or in place of, the proposed 50 kHz spectrum block size. (p. 2)
    - Licensing of different channel block sizes -- some large and some small -- will: (1) diminish the number of competitors in each service area; (2) undercut competitive pressures to develop spectrum efficient technologies; and (3) undercut incentives to develop intersystem interoperability and roaming. (pp. 2-3)

Cellular carrier participation:

- The record supports open eligibility to permit all qualified applicants to hold narrowband PCS licenses, including cellular operators. The adoption of open eligibility will ensure the full benefits of rapid deployment, universal availability of AMS, incentives for development of innovative services and robust competition. (p. 2)

Local exchange carrier participation:

- Same as above.

Licensing policies:

- The proposals of Metriplex and In-Flight for preferential licensing procedures to benefit "pioneers" and "experimenters" should be denied because: (1) the FCC has already established controversial procedures to award pioneer preferences; (2) adoption of these proposals would be inconsistent with the already established procedures and would be inequitable to potential applicants who did not request pioneer's preferences or obtain experimental licenses. (pp. 4-5)

Other issues:

- Opposes the proposals of UTC for spectrum set-asides restricted to internal company use as they are at odds with the FCC's objectives in this proceeding. (p. 4)
- Since there is widespread support for expedited action to allocate the 901-902, 930-931, and 940-941 MHz bands, the FCC should separate the 2 GHz broadband and 900 MHz narrowband portions of this proceeding. (p. 1)

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ARCH COMMUNICATIONS GROUP, INC.
Reply Comments on 900 MHz Narrowband PCS

Interest: Paging company and potential 900 MHz narrowband PCS provider.

Band plan:

- Many parties support the FCC's decision to allocate the designated 900 MHz spectrum for narrowband PCS uses. (p. 2)
- Continues to support a flexible channel plan with frequency assignments in the 50 kHz to 100 kHz range as it will foster competition and diversity of services as well as create licensing opportunities. Moreover, there is little support for granting significantly larger blocks of spectrum to a smaller number of licensees. (p. 3)
- Concerned that several commenters' suggestion to allocate 25 kHz channels will inhibit development of advanced services as carriers may be inclined to transport old paging service technology to the new bands. (pp. 3-4)

Service areas:

- Impressed by the amount of support for the designation of some nationwide PCS licenses. Thus, Arch now believes that some, but not all, of the narrowband PCS spectrum should be allocated on a nationwide basis. (pp. 6-7)
    - Would not support nationwide licenses if the FCC granted relatively large amounts of spectrum to each licensee, i.e., greater than 100 kHz per applicant. (p. 7)
- A demand for wide-area services limited to particular regions continues to exist such that the FCC should reserve a substantial portion of the spectrum for licensing according to Telocator's five region plan. (pp. 4, 7)

Cellular carrier participation:

- Disagrees with those parties advocating no eligibility restrictions. Arch believes cellular carriers and/or wideband PCS licensees will already control sufficient spectrum to offer narrowband services. Thus, their eligibility should be limited. (pp. 10-12)
    - As the FCC has relaxed its rules to allow cellular and wideband PCS licensees the flexibility to devote spectrum to a variety of uses according to perceived market needs, they should not be entitled to preempt narrowband PCS spectrum. (pp. 11-12)

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Licensing policies:

- The comments echo Arch's position that a lottery, combined with strict anti-speculation measures, should be employed. Parties support detailed technical showings and reasonably high up-front application fees. (p. 5)

- Disagrees with restrictions on the transferability of narrowband PCS permits and licenses -- free transferability serves the public interest by enabling those less interested in providing service to transfer their authorizations to more qualified parties. (p. 10)

Technical standards:

- The comments support the adoption of minimal technical standards for narrowband PCS as well as the proposal to base height/power limits for 900 MHz narrowband PCS spectrum on Part 22 of the FCC's rules. (p. 5)

Other issues:

- Disagrees that severance of the 900 MHz narrowband portion of the PCS proceeding would expedite implementation of narrowband PCS services. Rather, consolidation has accelerated the timetable for the narrowband allocation. (pp. 8-9)

    - Also believes that severance of the narrowband docket for early consideration could cause the 900 MHz band to become the target of speculators, as it would be the first available PCS band. (p. 9)

- Disagrees with commenters claiming entitlement to narrowband PCS pioneer's preferences. While Arch agrees that Mtel has failed to distinguish itself, it does not believe that others should be elevated to a preferred licensing status. (p. 12)

CELPAGE, INC.
Reply Comments on 900 MHz Narrowband PCS

Interest: Radio common carrier and private carrier paging licensee.

Service areas:

- Disagrees that AMS allocations should be set aside exclusively for regional and nationwide service licenses, contending that licenses should be granted on a local basis. (pp. 5-7)
    - Anecdotal evidence of the failures of nationwide paging companies suggests that paging is essentially a local service. (pp. 5-6)
    - There is no public interest justification for designating AMS as only a region-wide or nationwide service -- only large carriers will have the financial resources to apply for and construct AMS systems on a multi-state or nationwide basis and precedent suggests that frequencies will not be made available for smaller uses, even if nationwide demand fails to meet expectations. (p. 6)
    - Instead, parties should be allowed to link local networks together to form regional or nationwide networks without arbitrary boundaries such as those drawn by Telocator and others. (pp. 6-7)
- The cellular model for geographic allocation of licenses should be emulated. (pp. 7, 8)

Cellular carrier participation:

- Entry of cellular licensees into the AMS field should be limited -- the FCC has granted cellular licensees flexibility to provide a variety of auxiliary and ancillary services over their networks and additional allocations for AMS or PCS services are not needed. (pp. 12-13)

Local exchange carrier participation:

- The competitive concerns addressed above may also apply to local exchange carriers. (p. 13)

Licensing policies:

- Artificial limits on the number of license allocations per market would have anti-competitive implications and AMS allocations should be made on a nonexclusive basis, allowing the marketplace to dictate how many carriers can effectively compete on a local, regional or nationwide basis.

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- Disagrees that strict financial qualifications criteria and high application fees will "cure" speculation. Rather, they will only preclude legitimate applicants. (p. 9)

- Recommends elimination of incentives for application mills to become involved in AMS by: (1) allocating multiple licenses in each geographic area such that the supply of available licenses exceeds demand in all but the most populated markets; (2) strictly enforcing construction deadlines; and (3) adopting "anti-trafficking" rules similar to those in Part 21 of the FCC's rules. (p. 10)

- If good cause exists for assigning a license less than one year after a grant, i.e., changed business circumstances or an opportunity to "trade" a license for one that fits the party's business plans, FCC should review the request and approve it if it is in the public interest. (pp. 10-11)

Regulatory status:

- Disagrees with Telocator's self-designation proposal for AMS licensees as the private/common carrier distinction is statutory and should not be open to random selection. Rather, the FCC should designate whether AMS services will be allocated to Part 22 or Part 90 of the Rules, or both, on a mutually exclusive basis. (pp. 3-5)

- The private carrier paging model should be emulated as a "role model" for developing AMS regulations. (pp. 11-12)

- Believes that PCS and AMS carriers clearly have a federally protected right of interconnection to the PSTN under the Communications Act -- this right does not change regardless of how AMS and PCS services are regulated, and the FCC should state that discrimination against PCPs is unlawful. (pp. 13-15)

Technical standards:

- Does not object to the proposed height/power limitations similar to those for 900 MHz paging operations in Part 22 but is not certain that the 20-mile service radius assumptions for 900 MHz paging would be appropriate or applicable for AMS stations. (p. 15)

Other issues:

- Agrees that AMS issues should be resolved in a separate proceeding, as these issues and proposed rules can be more speedily resolved than the thornier PCS issues. (p. 3)

ECHO GROUP L.P.
Reply Comments on 900 MHz Narrowband PCS

Interest: 900 MHz pioneer's preference applicant.

Band plan:

- Supports channel allocations of not less than 50 kHz per licensee split between equal non-contiguous frequency blocks for narrowband AMS -- allocations of less than 50 kHz would reduce the operational efficacy of fully duplexed technologies such as Echo's. (p. 2)

- 900 MHz narrowband licensees should be allowed to subdivide their allocated channels into subchannels of 5 kHz to accommodate various forms of AMS. (p. 2)

    - Subdivision of channels may require additional coordination among service providers if licenses are regional rather than nationwide, but will allow more efficient use of the spectrum. (p. 3)

Service areas:

- Disagrees with Arch's assertion that nationwide 900 MHz AMS licenses would be anticompetitive. Given the array of services contemplated, this would only be true if all nationwide licenses were awarded to the same party. (p. 3)

- The economies of scale available to nationwide licensees would translate into better and lower cost service to subscribers. (p. 3)

FREEMAN ENGINEERING ASSOCIATES, INC.
Reply Comments on 900 MHz Narrowband PCS

Interest: Applicant for 900 MHz pioneer's preference.

Band plan:

- If the FCC allocates 50 kHz channels, it should also allocate at least one 150 kHz channel in each market area. (p. 1)
    - Smaller companies may not have the financial resources to aggregate the channels necessary to implement innovative techniques requiring broader bandwidth. (p. 1)
    - Freeman requires 150 kHz of bandwidth and would have to aggregate three adjacent 50 kHz channels if the FCC restricts the channel allocation in this manner -- this places an undue burden on systems such as that proposed in Freeman's pioneer's preference request and is impractical. (p. 2)

Licensing policies:

- Opposes PageNet's competitive bidding proposal as it is not authorized under the Communications Act and it could preclude small companies from obtaining licenses to offer new and innovative services. (pp. 2-3)

Other issues:

- Freeman's pioneer's preference request shows significant innovation and application of spectrally efficient technology, not contemplated by any other applicant. Therefore, it should not be overlooked by the FCC. (p. 3)

GRAND BROADCASTING CORPORATION
Reply Comments and Errata on 900 MHz Narrowband PCS ("Reply")
Pioneer's Preference Request ("Request")

Interest: New applicant for pioneer's preference seeking 900 MHz spectrum for mobile IVDS ("Interactive Broadcast Radio Service" or "IBRS")

Band plan:

- Seeks reallocation of the IVDS spectrum for mobile use in addition to fixed use, or, alternatively, allocation of 1 MHz in the 900 MHz bands proposed for narrowband PCS, for two providers with 500 kHz each (Reply 1).

- Grant of 1 MHz to IBRS will advance all of the policy goals identified in GTE's comments -- IBRS will promote use of the landline network; the effects of cable television company entry into the multimedia market should be assessed; whereas the demand for narrowband PCS is unknown, the demand for IBRS is well defined and will meet needs identified by the FCC in the IVDS proceeding; IBRS will be competitive, as two providers are proposed; IBRS will promote US competitiveness by allowing the US to assume a dominant role in interactive broadcast radio services (Reply 2-11).

Other issues:

- Seeks a pioneer's preference for proposing a new radio service (IBRS) and designing unique and innovative equipment to implement IBRS (Request)

- IBRS will allow users in their home and while away to interactively respond to coded advertisements on radio using Grand's Radio Order device (patent pending) (Request 2-18).

IN-FLIGHT PHONE CORPORATION
Reply Comments on 900 MHz Narrowband PCS

Interest: Seeking pioneer's preference for 900 MHz service.

Band plan:

- The FCC should create one or more 500 kHz channel blocks to accommodate a service requiring more than 150 kHz of bandwidth for base station operations throughout its service area. Creation of such a channel block is consistent with the FCC's objective to facilitate innovation at low cost since it would still be possible to issue 15-25 regional PCS licenses in each service area. (p. 6-8)

- If a 500 kHz channel block is not established, the FCC should allow an applicant that employs frequency reuse to apply for a license as long as it identifies the location of each base station in its system and each base station operates within a bandwidth that is equal to or less than the bandwidth composing a channel block. (p. 8)

    - This proposal will: (1) maximize the number of narrowband licenses granted; (2) facilitate innovation; and (3) promote technically efficient use of the spectrum. (p. 9)

Service areas:

- The FCC should accept an application to provide nationwide narrowband PCS only if it is clear from the face of the application that the proposed service cannot economically or technically be provided on a regional basis. (pp. 2-3)

    - Accepting a nationwide license application in this narrow circumstance is consistent with the comments filed and the FCC's commitment to facilitate diverse narrowband PCS systems. In addition, it would reduce speculation. (pp. 4-5)

- Dial Page offered no reason for opposing nationwide narrowband PCS licenses. (p. 5)

- Arch's speculation that award of a nationwide license would "potentially" reduce competition is not a valid justification for refusing to grant any nationwide licenses nor is its belief that regional licensees would be at a competitive disadvantage. (pp. 5-6)

MCCAW CELLULAR COMMUNICATIONS, INC.,
THE PAGING DIVISION
Reply Comments on 900 MHz Narrowband PCS

Interest: Provider of common carrier paging services.

Band plan:

- Supports Telocator's position that the FCC should treat the 901-902, 930-931, and 940-941 MHz bands as a whole for implementation of advanced messaging-type services. (p. 2)

Service areas:

- Agrees with Telocator that the FCC should award national and regional licenses for narrowband PCS rather than "local" licenses. (p. 2)

Cellular and local exchange carrier participation:

- Believes the FCC should seek to maximize open entry opportunities for a variety of different narrowband PCS providers and allow all qualified applicants to be eligible to file for PCS spectrum notwithstanding any licenses held in other services. (p. 2)

Licensing policies:

- Agrees that the FCC should adopt strict anti-speculation safeguards to prevent lottery abuses. (p. 2)

Regulatory status:

- Also agrees that the FCC should adopt rules and regulations that promote a flexible regulatory approach, including the ability of narrowband PCS licensees to self-designate whether services to be provided are common or private carriage. (p. 2)

Other issues:

- Due to the fundamental differences between narrowband and broadband PCS services, this proceeding should be bifurcated and the FCC should render a separate decision on the narrowband portion. (pp. 2-3)

METRIPLEX, INC.
Reply Comments on 900 MHz Narrowband PCS

Interest: Telecommunications company and 900 MHz pioneer preference applicant.

Band plan:

- Believes that division of the 3 MHz allocation into 100 kHz channel licensing blocks is the appropriate choice for this spectrum. (p. 3)

Service areas:

- Agrees that the FCC can grant nationwide authorizations to assure that AMS proposals are economically viable and vigorously competitive. (p. 3)

- Also can support the adoption of a regional licensing scheme utilizing one of the five to seven region divisions proposed by various commenters. (p. 3)

Licensing policies:

- Believes that a consensus has developed for authorizing each of the pioneer's preference applicants a single license in either the 931 or 941 MHz bands (with a corresponding block in the 901-902 MHz band for low-power uses). (p. 3)

- Reasonable construction and utilization requirements should be imposed to assure that spectrum is put to its most efficient use, including limiting licensees to providing the services and technology proposed in their pioneer's preference applications, and requiring licensees to submit a full report to the FCC at the end of a 36 month period, detailing services actually provided to the public, over what area, and any construction then under contract. (pp. 3-4)

Other issues:

- The FCC's decision to deny all but one of the pending pioneer's preference requests will result in an "open season" licensing scheme for the 50 kHz spectrum blocks proposed by the Commission. (p. 2)

MOBILE TELECOMMUNICATION TECHNOLOGIES CORPORATION
Reply Comments on 900 MHz Narrowband PCS
Reply to 900 MHz Narrowband PCS Pioneer's Preference Comments

Interest: Paging company and recipient of a tentative pioneer's preference for its Nationwide Wireless Network ("NWN") service.

Band plan:

- Many parties have independently proposed systems based on 50 kHz channels. (pp. 21-22)
    - 50 kHz blocks are an appropriate division from a technical standpoint as proposed narrowband PCS systems employ advanced modulation schemes that are unable to function in more limited bandwidth. (p. 22)
    - No party requesting spectrum allocations in excess of 50 kHz has proven that efficiencies would result from such an allocation or identified any functionalities that could not be implemented in a smaller bandwidth. Moreover, channelization plans with more than 50 kHz blocks would restrict entry opportunities and limit competition and diversity. (pp. 22-23)
- If the FCC modifies its proposed band plan by granting paired channels, all proposed two-way narrowband PCS systems should have the option to acquire a separate smaller channel for reverse channel operations. (pp. 23-25)
    - Such a modification should not affect Mtel's tentative pioneer's preference as the addition of a separate reverse channel is a minor revision that enhances the functionality of the NWN service. (pp. 24-25)

Service areas:

- The opening comments document significant demand for national licenses and agree that nationwide narrowband PCS systems should be authorized. (pp. 13-15)
- PacTel's argument against nationwide allocations is inconsistent with its proposal for national exclusivity for certain 900 MHz private carrier paging companies and ignores market studies. (p. 15)
- In contrast to Arch's assertion, three nationwide allocations would permit extensive entry opportunities for a broad range of potential providers. (pp. 15-16)
- Mtel's NWN system illustrates the efficiencies provided by nationwide systems. (pp. 16-17)

Licensing policies:

- If lotteries are used, Mtel agrees that anti-speculation measures are needed. It supports: (1) qualification showings; (2) firm financial commitments; (3) engineering showings; (4) PacTel's tiered fee structure; (5) short filing windows; (6) construction benchmarks; and (7) a prohibition on pre-lottery settlements. (pp. 18-19)

- Mtel advocates grant of a statistically significant lottery preference for applicants with prior experience in mobile services. (p. 20)

Regulatory status:

- The record suggests that self-regulation will maximize flexibility for new providers and foster competitive narrowband services. (pp. 11-12)

Technical standards:

- The FCC should adopt minimal technical regulations, such as: (1) height and power limits based on the 900 MHz paging service; (2) the broadest emissions mask reasonably assuring non-interference; and (3) no restrictions on use of technologically appropriate system designs. (pp. 11-13)

Other issues:

- In contrast to the 2 GHz band PCS proceeding, the 900 MHz bands are currently unoccupied, numerous entry opportunities exist, and the industry agrees on the majority of issues. Also, the proposed rules for the two services are different. Thus, the FCC should separate the proceedings to resolve 900 MHz narrowband issues more quickly. (pp. 10-11)

- Submits a separate field trial report, detailing Mtel's implementation of NWN, and describing further demand and market information. (pp. 6-8, Attachment)

- Submits replies to 900 MHz narrowband PCS pioneer's preference comments, outlining how its NWN service meets the FCC's standards for grant of a pioneer's preference. (pp. 11-16)

    - Addresses comments taking exception to grant of Mtel's tentative pioneer's preference (Arch, Florida Cellular and BellSouth), indicating that these arguments have been previously addressed on the record and either mischaracterize Mtel's proposal or misstate the legal standards. (pp. 16-26)

    - Submits that neither the facts nor law support BellSouth's contentions that the FCC's procedures in the 900 MHz narrowband pioneer's preference proceeding violate the APA and the Communications Act. (pp. 27-47)

MOTOROLA INC.
Reply Comments on 900 MHz Narrowband PCS

Interest: Equipment manufacturer

Band plan:

- The 930-931 MHz and 940.000 to 940.550 MHz would be channelized into thirty-one 50 kHz talk-out channels. Each 50 kHz channel would be paired with one of forty-four 12.5 kHz talk-in channels from the 901.000 to 901.550 MHz band. The 13 remaining talk-in channels would be made available to existing mobile radio licensees for advanced emerging technologies. (p. 58, 59)

- The 940.550 to 941.000 MHz band would be channelized into three 150 kHz channels for talk-out messages and would be paired with three 150 kHz talk-in channels from the 901.550 to 902.000 MHz band. (p. 59)

Licensing Policies:

- Commenters support both regional and nationwide licenses for 900 MHz narrowband PCS. Motorola's comments would create three nationwide carriers and five distinct regional areas. (p. 62)

Technical Standards:

- Licensees of 150 kHz channels should be permitted to split their channels into multiple, lesser bandwidth channels if needed. (p. 59)

- Commenters support liberal technical standards. (p. 62)

- Motorola believes that the height and power levels for nationwide licensees should also apply to regional licensees. (p. 62, 63)

- Maximum permitted power should be increased to reflect wider bandwidths. Motorola recommends that 50 kHz licensees be permitted to operate with 7 kilowatts and 150 kHz licensees be permitted to operate with 21 kilowatts provided emissions mask limits are met. (p. 63)

- Motorola recommends adoption of flexible modulation standards and emission limitations. Motorola provided an emissions mask in comments that would merely require emissions to be reduced by 70 dB at the channel edges. (p. 64)

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NATIONAL ASSOCIATION OF BUSINESS AND EDUCATIONAL RADIO, INC.
Reply Comments on 900 MHz Narrowband PCS

Interest: Trade association and frequency coordinator for business and educational radio service

Licensing policies:

- NABER supports the use of lotteries for licensing (6-7).
- Auctions should not be used in any event (6-7).

Regulatory status:

- PCS should be regulated as private carriage. At a minimum, carriers should be able to elect a regulatory status (4-5).
- Supports overwhelming number of commenters who believe that PCS providers, whether private or common carrier, should have a federally protected right of interconnection with the PSTN that is reasonable under the circumstances and no less favorable than that offered to any other customer or carrier (5-6).

Other issues:

- Supports severing the 900 MHz proceeding from the 2 GHz proceeding to speed authorization of new narrowband PCS systems (2-4).

PACTEL PAGING
Reply Comments on 900 MHz Narrowband PCS

Interest: Subsidiary of Pacific Telesis Group; paging company and applicant for 900 MHz pioneer's preference.

Band plan:

- The comments of American Petroleum, UTC, and Grand Broadcasting do not challenge the substantial need for narrowband PCS demonstrated by the other commenting parties. Thus, the allocation of 3 MHz of spectrum in the 900 MHz band for narrowband PCS is justified. (pp. 4-6)

- The comments provide substantial support for the adoption of an asymmetrical channel plan that includes a variety of bandwidths, to be available on an unpaired basis, an asymmetrical paired basis, or on an asymmetrically paired basis. (p. 10)

- There is also support for reserving the 901-902 MHz band for low-power mobile-to-base return link communications. (p. 10)

    - PacTel's specific channel plan proposal deserves careful consideration because it meets these consensus criteria. (pp. 10-11)

- The OPP Paper supports PacTel's conclusion that the maximum channel bandwidth granted to a single licensee should be 100 kHz as it recognizes that "the benefits of competition [are] best served by having more licenses . . ." (pp. 15-17)

    - There is little support for the PageNet and PageMart frequency reuse proposals that require 200 kHz blocks of spectrum -- such an allocation would be inefficient as applicants would file for large channel blocks even if their service needs could be satisfied with a smaller amount of spectrum and "warehouse" the unneeded spectrum. (pp. 17-18)

Service areas:

- The breadth of support for 3 to 5 narrowband PCS regions is significant and deserving of the FCC's attention. (pp. 7-8)

- Continues to believe that nationwide licenses should not be adopted -- other parties concede that aggregation of service territories will be relatively easy if the FCC adopts a small number of large geographic regions. (p. 19)

Cellular carrier participation:

- The narrowband commenters are unified in their belief that the FCC should not place restrictions on the eligibility of

existing messaging service providers, cellular carriers, LECs or others. (pp. 8-9)

Local exchange carrier participation:

- Same as above.

Licensing policies:

- Most parties endorse the use of lotteries to select narrowband PCS licensees, provided the FCC adopts strict anti-speculation measures such as: (1) adoption of strict financial requirements; (2) substantial filing fees; (3) detailed technical showings; (4) requirements for unique engineering; and (5) strict construction deadlines. (pp. 11-12)
    - PageNet does not provide a specific auction proposal to resolve the many issues that would arise if auctions were held. Nor does PageNet specify the type of auction it prefers. (p. 11, n.22)
    - Does not believe the FCC has the personnel resources to return to Mtel's proposed comparative hearing process. (p. 11, n.22)
- Few parties' proposals for application filing fees and forfeiture bonds were as detailed as PacTel's but several commenters (Arch, Dial Page, Telocator, In-Flight, and NABER) generally support the PacTel approach. (pp. 22-23)
- Participants share PacTel's concern that restrictions on transfer of narrowband PCS authorizations would not deter speculation but encumber the ability of licensees to acquire needed spectrum. (p. 24)

Regulatory status:

- The recent decision in AT&T v. FCC reiterates PacTel's preference for common carrier status -- if the FCC defines PCS as private carriage to avoid the regulatory implications of common carrier status, the licensing and allocation process may be tied up in litigation for years. (pp. 20-21)

Other issues:

- Many parties express a need for expedition of the narrowband PCS allocation and support the severance of the 900 MHz narrowband proceeding for early consideration. (pp. 13-14)

PAGEMART, INC.
Reply Comments on 900 MHz Narrowband PCS

Interest: Paging company and applicant for 900 MHz pioneer's preference.

Band plan:

- If the FCC were to carve the narrowband PCS spectrum into equal blocks of any uniform size, it would effectively standardize the PCS market by creating regulatory obstacles for providers needing spectrum blocks of another size. Instead, the FCC should couple a variable spectrum allocation plan of blocks between 25 to 250 kHz with concrete spectrum use requirements under which a multichannel service architecture, or similar technical justification, would be a condition of eligibility for an award of 250 kHz. (pp. 7-13)

- Mtel's plan to place all 50 kHz narrowband services in the 930-931 MHz band, leaving all other 25 or 50 kHz narrowband proposals incompatible with Mtel's in the 901-902 MHz and 940-941 MHz bands, fails to support the full technical diversity of narrowband PCS and would have the FCC's rules, instead of the market, determine whether frequency reuse techniques should be offered to consumers. (p. 5)

- Rejects some commenters' suggestion that the FCC should not allocate any spectrum blocks larger than 50 kHz at all, arguing that simulcast message delivery at higher data rates in 50 kHz channels is less efficient than geographic reuse of several smaller 25 kHz channels to deliver more messages at relatively lower data rates. (pp. 5-6)

- Freeman's plan to allocate at least four 150 kHz channels with 50 kHz return channels, two for regional use and two for nationwide use, also fails to accommodate the many proposals before the FCC. (pp. 6-7)

- An asymmetric channelization plan permitting aggregation of uniformly sized spectrum blocks is preferable to a variable plan without spectrum use safeguards because it would enable all current proposals to be implemented. (pp. 13-18)

    - PacTel's approach would impose no conditions on the award of a large 100 kHz spectrum block yet it would not accommodate PageMart's and PageNet's frequency reuse systems, defeating the goal of competitive diversity. (pp. 16-17)

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- There is an industry consensus that the FCC should place all return links for narrowband PCS in a "quiet band" at 901-902 MHz. (p. 18)

Service areas:

- The FCC must adopt national service areas, but particularly if it decides to encourage aggregation. (pp. 21-22)
    - Without nationwide licenses, the transaction costs involved in aggregating spectrum may be so high as to make aggregation economically prohibitive. (p. 22)
- If the FCC does not allocate nationwide service areas, it must allocate at least two 25 kHz channels on a nationwide basis to enable frequency reuse providers who have aggregated spectrum to offer multi-regional service. (pp. 23-24)

Licensing policies:

- The appropriateness of anti-speculative lottery measures depends on the channelization plan selected for narrowband PCS. (pp. 19-21)
    - If the FCC allocates variably sized spectrum blocks with spectrum use requirements, detailed technical showings and a requirement that winning applicants build out their proposal may be sufficient. (pp. 19-20)
    - If the FCC opts for a uniform spectrum allocation with aggregation and disaggregation, channel loading requirements, financial showings, forfeiture bonds, certification, and high filing fees would discourage speculation. (pp. 20-21)

PAGING NETWORK, INC.
Reply Comments on 900 MHz Narrowband PCS

Interest: Paging company; potential narrowband PCS provider; applicant for pioneer's preference.

Band plan:

- Concurs with recommendations that the FCC adopt a variety of bandwidths and frequency pairings. (p. 15)

Amount of spectrum per licensed system:

- Rejects other commenters' suggestion that block allocations of 25 or 50 kHz are preferable to 250 kHz, arguing that: (1) 250 kHz is minuscule when compared to the 30 MHz allocated to each cellular licensee; (2) the bandwidth necessary to permit frequency reuse is nominal in comparison to the resulting spectral efficiencies; and (3) a flexible allocation scheme will enhance competition. (pp. 15-18)

Service areas:

- Believes that some, if not all, of the narrowband PCS licenses should be granted on a nationwide basis, to achieve necessary economies of scale. (pp. 3-5)

- Rejects PacTel's argument that nationwide licensing will disserve the public interest by enabling fewer providers to enter the market, arguing that nationwide licensing does not create any unreasonable barrier to entry. To back up this assertion, PageNet states that, even with its proposed channelization plan, all the services currently proposed, as well as others, could be accommodated. (p. 10)

- Local licenses would seriously delay the availability of 900 MHz services. (pp. 11-14)

Licensing policies:

- Suggests that the FCC consider need showings for those entities requiring greater bandwidths. A carrier might be required to show that the service offered incorporates frequency reuse, digital technology, and/or high transmission speeds. (p. 18). The FCC might also condition the license on certain construction deadlines. (pp. 18-19)

- In response to Arch, PageNet submits that successful providers of paging service are necessarily well-financed and familiar with the needs of their customers. (p. 20)

- If the FCC does not have and has not obtained auction authority, it should design a lottery system that mimics the auction, requiring: (1) each applicant to file an itemized

estimate of the cost of constructing 75% of its system during the first three years of its license; (2) applicants relying on internal financing to submit independently audited financial statements certified within one year of the date of application and an independently audited balance sheet dated no more than 60 days before the date of application; and (3) applicants relying on outside financing to submit a financial statement from the lender, indicating that it will provide sufficient capital to build the system. (pp. 22-23)

- Proposes that nationwide licensees be required to construct stations in a minimum of 75% of the markets designated in the application within three years. (p. 23)

- Rules should be devised to permit rapid transfer of licenses to allow a "private auction" to take place. (pp. 23-24)

Regulatory status:

- In response to PacTel and Arch's proposal to label AMS as common carriage but preempt it from state regulation, PageNet submits that the FCC may face considerable, unnecessary hurdles. Thus, advanced paging licensees should be permitted the flexibility to choose between private carrier or common carrier regulation. (pp. 27-28)

- Differences in interconnection rates charged to private carriers and radio common carriers constitute unreasonable discrimination under the Communications Act and under specific state statutes and regulations. (p. 30)

Other issues:

- None of the applicants seeking an allocation of the 900 MHz spectrum for uses other than advanced paging (Grand Broadcasting, Corporate Technology Partners, and In-Flight Phone) have adequately demonstrated a demand for its service that justifies removing spectrum from the AMS pool, nor has it indicated that no other spectrum exists to accommodate its service. (pp. 24-26)

- The record in this proceeding demonstrates that the FCC has, <u>de facto</u>, both changed and inconsistently applied its pioneer preference rules -- the FCC incorrectly concluded that PageNet's offering was not innovative because it relied on frequency reuse, a scheme used in cellular but not currently applied to paging services, while granting Mtel a preference for a multicarrier modulation technique known for years. (pp. 30-34)

TELOCATOR
THE PERSONAL COMMUNICATIONS INDUSTRY ASSOCIATION
Reply Comments on 900 MHz Narrowband PCS

Interest: Personal communications industry association.

Band plan:

- There is broad support for dealing with all three frequencies at 900 MHz as a single allocation, designated for advanced messaging-type services. (p. 5)

- There is a general consensus that asymmetrical channel bandwidths would be appropriate for some of the services that require paired channels in order to provide two-way communications. (p. 12)

Service areas:

- National licenses for narrowband PCS were advocated by a wide range of industry participants. In contrast to broadband PCS, the proposed paging and advanced messaging services for narrowband PCS spectrum are inherently wide area markets, implemented using transmitters with large coverage areas, and having significantly more entry opportunities. (p. 15)

- Telocator's plan for five large regional service areas was supported by commenters -- even those who did not advocate any specific regional scheme argued for regional areas in size, scope, and number consistent with Telocator's proposal. (pp. 15-16)

Cellular and local exchange carrier participation:

- The opening comments support Telocator's opposition to limitations on cellular and LEC eligibility to compete for narrowband PCS licenses. (p. 12)

Licensing policies:

- The record demonstrates support for lotteries as the most appropriate means for selecting narrowband PCS licensees -- many commenters joined Telocator in advocating strengthened lottery procedures by employing strong, front end qualifiers. (pp. 16-17)

Regulatory status:

- Narrowband PCS licensees require the flexibility to operate under the regulatory terms and conditions that make the most business sense in their market. Thus, commenters have joined Telocator in supporting a framework that allows 900 MHz